REMARKS

Claims 1 through 8 have been rejected under 35 U.S.C. §103(a) as unpatentable over Krattiger et al (U.S. Patent No. 6,500,115) in view of Tojo (U.S. Patent No. 4,753,224). However, for the reasons set forth hereinafter, Applicants respectfully submit that Claims 1 through 8, as well as new Claim 9, distinguish over both Krattiger et al and Tojo, whether considered separately or in combination.

The present invention is directed to a display arrangement for displaying information generated by a picture signal generating unit 11, in a desired orientation in an observer's field of view, as depicted in Figures 1 and 2. For this purpose, signal information from the signal generating unit 11 is provided to a display unit 10, which may be for example an LCD module. The picture generated by the display unit 10 is input to an image transmission device 5 (including a lens 8, and glued connection 9 as shown in Figure 1) and an eyepiece 1 which is connected to the end of the transmission device by a means of a flange 17. The transmission device itself is provided in the form of an optical fiber bundle, which is encased along at least a part of its length within a sheath 6 which has a mechanical memory effect, such that, when bent into a particular shape, it remains in that shape (i.e., a plastic deformation).

The elements referred to above can be worn on the observer's head, attached, for example, to a headband or helmet by means of a fastening device. As noted, for example, at paragraph 18, the display unit or picture source 10 is preferably fastened on the rear of the helmet, while a clamp 16 is preferably mounted on the side of the helmet. Thus, as can be seen from Figure 2, with such an arrangement, it is possible to bend the picture transmission device 5 into a shape such that the eyepiece 1 is disposed in the observer's field of view.

According to a feature of the invention, the display arrangement includes an adjusting device comprising a holding part 7 and an adjusting screw 15, as shown in Figures 1 and 2. This arrangement permits the picture transmission device (consisting of the optical fiber bundle and relating couplings) to be secured in its momentary position following a deformation (bending or torsional adjustment) thereof. As noted in the specification at paragraph [0017], this arrangement permits a rotation within the eyepiece of an image generated by the image generation unit, and transmitted to the eyepiece via the transmission device 5, without having to change the position of the picture source 10. Since the latter is, as noted previously, preferably fastened on the rear of the observer's helmet or headband, such rotation is important, in that when the transmission device 5 is bent or deformed so that the eyepiece falls within the observer's field of view, the orientation of the image within the eyepiece may not be provided in the desired orientation. (That is, the image or information from the signal

generating unit 11, which is displayed in the display unit 10 may have been rotated out of the desired (top side upwards) orientation. By providing an additional degree of freedom, the adjusting device eliminates this problem.

The latter features of the invention are recited in each of the independent claims. Claim 1, for example, recites a display unit which is coupled to the signal source for displaying extrinsically generated information which is to be replicated in the eyepiece, in a desired orientation. The image thus generated is communicated to the eyepiece by an image transmission device which includes a fiber optics section which is encased and fixed in a spatial configuration by a bendable material that remains in a shape assumed by a bending. Finally, Claim 1 further recites that the display arrangement includes "a setting means mechanically coupling said display unit and said image transmission device, for eliminating a deviation of said image from said desired orientation, by rotating said image within said eyepiece, so that said information is displayed in said desired orientation, and for securing the picture transmission device in its momentary position after a deformation of the fiber optics section".

Claims 5 and 8 are similarly limited. In addition, a new Claim 9 has been added which further recites that the fiber optics section has an image receiving axis which is directed at the image display unit and that the setting means includes means for rotating the fiber optic section relative to the image display

unit about the image input axis, and for fixing the fiber optic section in a desired rotational orientation relative to the image display unit.

The features of the invention referred to in the preceding two paragraphs are neither taught nor suggested by either of the Krattiger et al and Tojo references.

Krattiger et al, in particular, discloses an endoscope that has a shaft 12 that is rotatable relative to a handle 14. Insofar as the disclosure indicates, the shaft itself is straight and rigid, and includes a side viewing window 38 which is mounted at its distal end, and is rotatable back and forth in the longitudinal direction of the shaft (arrow 42), about an axis perpendicular to the shaft, as best seen in Figures 1 and 2. (See Column 7, lines 55-61.) By pivoting the window 38 back and forth as indicated by arrow 42, and rotating the shaft 12 as indicated by the arrow 34 (Figure 1) it is possible to adjust the viewing direction 40 to observe a desired object, in a desired direction. The purpose of this arrangement is to provide an endoscope which can be easily manipulated and used to alter the viewing direction as needed. (See in particular, Column 3, lines 20-45.)

As can be seen from the foregoing brief description, the Krattiger et al apparatus contains no signal source which provides extrinsically generated information to be replicated in desired orientation in the eyepiece, and it also

contains no display unit which is coupled to the signal source for displaying such an image. Moreover, while the display apparatus defined in Claim 1 transmits the image generated by the image display unit for display in the desired orientation relative to the eyepiece, the object and operation of Krattiger et al is the opposite. That is, a rotation of the shaft 12 according to the arrow 34, or a rotation of the window 38 according to the arrow 42, or a combination thereof, is used to alter the viewing direction in order to inspect different areas adjacent to the distal end of the shaft.

The Tojo reference, on the other hand, discloses an endoscope which includes a specially shaped tip that permits observation from a vantage point that is closely adjacent to a flat surface against which the tip may be positioned. For this purpose, as best seen in Figure 4, a planar surface 51 is incised or cut away from the tip in such a manner that the greatest amount is removed at the forward end of the tip body 16. Since the planar surface 51 is also closely adjacent the observing window 7A, it permits the latter to be positioned closely adjacent to a limiting side wall of a space which is being examined, as best shown in Figure 12, and as described at Column 6, lines 11-17.

The Office Action states at page 3 that Tojo teaches encasing the light transmitting medium in a material which is bendable and which remains in a shape assumed by a bending, referring to Column 3, lines 34-37. That portion of

the disclosure, however, states that the elongate flexible tubular element 2 is composed of an outer woven metal sheath 23, an interior flexible tube lining 25 and an interwoven material sheath 26, as well as an interior flexible spiral tube lining 27. It is apparent that the tubular element is, as stated in the disclosure "flexible", as would be necessary in order to permit it to be used to inspect the interior of piping, as noted at Column 1, lines 8-10, for example. (See also Column 2, lines 35-37.) However, it does not follow, and Tojo nowhere states that the flexible tube remains in a shape assumed by a bending. Indeed, the opposite appears to be true in that in order to negotiate turns and curves within the interior of a pipe (assuming that the pipe is not straight), the elongated flexible tubular element would need to be resilient, such that it can continuously change its shape in order to navigate along the conformation of the pipe which is being inspected. Nothing in Tojo suggests, on the contrary, that the flexible tubular element 2 in Tojo is in fact plastically deformable, such that it maintains any shape into which it is bent. It would not appear to be usable if it were.

Moreover, Applicants respectfully submit that if the Krattiger et al apparatus were modified to provide for bending of the shaft 12, the utility of the Krattiger et al apparatus would be destroyed. That is, in Krattiger et al, it is essential that the shaft 12 be maintained straight, so that the window 38 can be rotated about the axis of the shaft as shown in arrow 34 to change only its viewing direction. If in fact the shaft 12 were bent, any rotation of the shaft

relative to the handle 14 would cause a large displacement of the window 38, so that not only would its viewing direction be altered, but its position would be substantially changed as well, making it extremely difficult to rotate the tip as described in order to obtain the best vantage point.

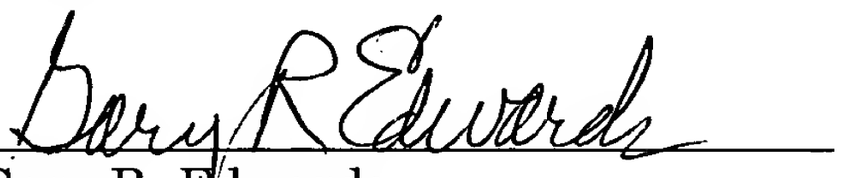
The D'Amelio et al reference (U.S. Patent No. 4,699,463), referred to at page 4 of the Office Action has not been relied on in the rejection of Claims 1-8 herein. However, to the extent that it is considered relevant, Applicants note that the same comments apply to the "flexible" elongate tubular inspection instrument, as are made above with regard to Tojo. That is, in particular, the proposition that the tube is "flexible" does not imply that it is necessarily plastically deformable, or that when bent, it retains the shape into which it is bent. Indeed, for the reasons set forth above, such a property would render the instrument unusable for its stated purpose of being able to "snake" its way into otherwise inaccessible locations. Moreover, if the tube were plastically deformable as noted, any rotation after it has been inserted along a serpentine path would be impossible, without the likelihood of damage to either the instrument itself or to the thing being examined.

In light of the foregoing remarks, this application should be in condition for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this amendment or the application in general,

a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #951/49937).

Respectfully submitted,



Gary R. Edwards
Registration No. 31,824

CROWELL & MORING LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844
GRE:kms

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